CILLI ENVIRONMENTAL GROUP, LLC

December 5, 2000

Draft Work Plan for The Bayonne Barrel & Drum Site Project

- Furnace Courtyard Area
- Storage Tank Area
- Report by BB&L
- Report by Weston for the EPA

This Remedial Action Workplan (RAW) is written to address the USEPA's request for closure of the RCRA solid waste management unit's, cleanup the site, and bring the site to a point where it can be redeveloped and once again provide tax revenue to the City of Newark. CEG proposes the following strategy: once the RCRA management units and remaining contaminated areas have been closed/remediated, Cilli Environmental Group, LLC. proposes capping the entire site with asphalt and preparing the site for a commercial/retail shopping center.

2.0 SITE DESCRIPTION

2.1 General

The Bayonne Barrel and Drum Company was founded in 1940 as the result of the merger of two companies; the Bayonne Barrel Company and the Export Barrel Company. During the late 1930's or early 1940's steel drums were at a premium due to the war effort and Bayonne Barrel and Drum began reconditioning steel drums. From the 1940's until the operation ceased in 1982, the reconditioning facility was developed as described in section 3.0 of this plan. In general, RCRA empty drums were received at the site for reconditioning either for specific customer re-use or for general re-sale. Although the mechanical means for handling and reconditioning drums changed over the life of this facility, the processes reportedly remained similar.

2.2 Location

The Bayonne Barrel and Drum Company facility is located at 150 Raymond Boulevard, Essex County, Newark, New Jersey. The site is situated on approximately 14.5 acres of land. The site is bounded to the north by the Pulaski Skyway, Routes 1&9 to the west, the New Jersey Turnpike to the east and southeast, and the former Newark Drive-In to the south. The site is currently comprised of two tracts of land: Tract 1 - 8.966 Acres, Tract 2 - 5.539 Acres.

2.3 Soil Characteristics and Geology

The site is reportedly located in an old floodplain of the Passaic River. Site topography generally slopes to the east northeast across the site. Elevations of the property range from approximately 10 feet above mean sea level (MSL) to approximately 20 feet above MSL. Surface drainage follows the topography east to a series of storm drains along the eastern property line. The storm drains were constructed during the construction of the NJ Turnpike to re-direct the remaining flow of Harrison creek, which historically traversed this property. The storm drains are believed to discharge to the Passaic River.

The site is underlain by Pleistocene drift deposited during the Wisconsin glaciation. The drift is underlain by the Brunswick Formation. Soil lithologic data presented by Dan Raviv and Associates substantiate the presence of coal cinders and ash across the site to an average depth of ten feet below the surface elevation. Fill is reported at boring BBDC3 by Raviv to be

underlain from approximately 10 feet to forty feet "by a medium to coarse grained, well sorted sand that ranges in color from brown to red-brown to dark maroon-brown. The material observed from forty to fifty feet below surface consists of a dark red-brown, uniform, coarse silt. Below fifty feet, small fragments of dark red shale were observed."

Although specific records are not available, the northern third of the property is also presumed to have been filled prior to the construction of the original buildings occupied by BB&D.

Fill material in the southern portions of the site consist of refuse of an undefined nature deposited by the City of Newark during the operations of the old Newark Landfill, currently referred to by the NJDEP as the 15E Sanitary Landfill". Fill material in the central portion of the site includes cinders and ash reportedly from a neighboring power generating facility.

This material was used as a construction base for the expansion of the BB&D company.

2.4 Buildings and Structures

Nine (9) buildings currently exist at the site. They are as follows:

Bldg #1	29,000 sq.ft. Concrete block building used for the reconditioning of closed head drums, and for shot blasting open and closed head drums
Bldg #2	2,250 sq.ft. Drum staging building for preparation for the furnace and 760 sq.ft. Furnace for the cleaning of drums
Bldg #3	14,000 sq.ft. Concrete and brick building used to receive open head drums immediately after cleaning in the furnace
Bldg #4	20,000 sq.ft. Transite and steel building used for the reconditioning of open head drums
Bldg #5	4,000 sq.ft. Paint storage building
Bldg #6	5,400 sq.ft. Office building
Bldg #7	9,300 sq.ft. Machine shop and maintenance garage
Bldg #8	2,400 sq.ft. Boiler House
Bldg #9	1,750 sq.ft. Service Building

In addition to the buildings referenced above, additional structures at the site include; a water separator trench, a 5,000 gallon separator tank, a 60,000 gallon above ground tank utilized for the settling of water prior to discharge to the sewer, two (2) underground collection tanks at the end of the furnace, and a collection/separator trench located adjacent to the furnace. Two

(2) additional above ground storage tanks are located in the water separator area. These tanks were reportedly never put into service.

2.5 Operations Summary

RCRA empty open head drums and closed head drums were received at the facility via truck for reconditioning. According to the owner of BB&D, drums were received from a wide variety of industries involved in the production or handling of foodstuffs, chemicals, wastes, etc. Upon receipt, the drums were staged in rows according to client and/or drum type prior to processing or were transferred directly from incoming trucks to operation areas for reconditioning.

Drums were handled on a first-in, first-out basis. Empty drum storage areas were laid out in rows in such a fashion as to store one hundred drums in each tier to facilitate inventory control.

All drums were sorted with regard to size, gauge, customer and general condition. Drums received in small quantities were stored close to the beginning of each operation. Drums were transferred from yard storage to production areas with four specially designed trucks. Yard trucks were for onsite use only.

3.0 SITE LAND USE HISTORY

The Bayonne Barrel & Drum Co. (BB&D) site consists of an 8.966 acre parcel of land described as lots 3, 5, and 16 in Block 5002, Newark, Essex County, New Jersey and a 5.539 acre parcel of property described as lot 14 in Block 5002, Newark Essex County, New Jersey owned Mr. Frank Langella. Mr. Langella leased this property to BB&D for use in connection with its recycling operation. These two properties are collectively referred to as 150 and 154 Raymond Boulevard Newark, New Jersey, which is the subject of this Remedial action Workplan.

The properties previously owned by Bayonne Barrel and Drum and Frank Langella have been subject to numerous sources of environmental contamination prior to their acquisition of the land. This section presents the history of the acquisition of the property and, to the extent known, the history of the uses of the property prior to BB&D's operation.

3.2.1 Background Investigation

Substantial background information has been identified concerning the use and environmental condition of the BB&D properties and adjacent properties. This information includes the following reports: "*Preliminary Site Investigation*" and "*Results of Preliminary Investigations and Sampling in the Proposed NJ Turnpike Right-of-Way at Bayonne Barrel and Drum*, by Louis Berger & Associates, December, 1986; "*Results of Preliminary Investigations and Sampling in the Proposed NJ Turnpike Right-of-Way at the Newark Drive-in Property* ", by Louis Berger & Associates, September, 1986; "*Soils and Groundwater Characterization Bayonne Barrel and Drum Company* ", by Dan Raviv Associates, April, 1986; "*Summary Report on Test Pit and Monitoring Well Investigation at the Newark Drive-in*", by Wehran Engineering Corp., October, 1988; "*Preliminary Site Assessment Bayonne Barrel and Drum Company*", by Christopher S. E. Marlowe, August, 1988; "*RCRA Enforcement Inspection Bayonne Barrel and Drum Company*", USEPA, Region II, August, 1988; and "*RCRA Closure Plan for Bayonne Barrel and Drum Company*", by Diversified Environmental Resources, Inc., January, 1990.

5.0 DESCRIPTION OF SOLID WASTE MANAGEMENT UNITS

The following Solid Waste Management Units (SWMU) have been identified at the site:

1. Furnace Area,
2. Water Treatment Area.

Information concerning these SWMU's and sampling results and interpretation from prior site investigations are summarized below.

5.2 Furnace Area

5.2.1 Introduction

The furnace area is situated in approximately the center of the facility between the closed head and open head drum reconditioning buildings (Bldgs 1, 3 & 4). The furnace area consists of a 2,200 square foot, one (1) story concrete block building and a conveyor fed furnace which was fired with natural gas. The furnace is approximately ten feet wide by eighty feet long. RCRA empty drums were conveyed to the concrete receiving building where they were placed onto a separate conveyor entering the furnace. After the drums exited the furnace they were washed and cooled with a spray bath. Discharge waters from this process were collected in two (2) tanks and a trough located adjacent to the furnace and directed via underground pipes to the south end of the water separator for treatment. The two underground storage tanks situated at the end of the furnace were also used to temporarily contain wash residues.

5.2.2 Nature of Contaminants

Residual ash from the cleaning of drums is evident throughout the area of the furnace and therefore remedial activities to remove this material will be undertaken. In addition, floor sweepings and other drummed materials generated from cleanup of the interior of the remaining site buildings are currently stored within the one story building. These materials will be sampled as described in section 6.1.4 of this plan and disposed of in accordance with current regulations.

In addition to the ash material in this area, solidified paints and/or other resinous materials are present. These materials predominate the surface area in the location of the feed end of the furnace. Although these solidified materials may not be characteristically hazardous, their presence suggests that organic contaminants may be present within this area.

Past results of samples collected by Raviv in 1985 indicate that a wide array of organic and inorganic contamination has occurred in the furnace area. Only three (3) locations (BBD17 through BBD19) within this area have been sampled to date and therefore additional sampling will have to be undertaken prior to the excavation and disposal of contaminants. Sampling was not conducted within this area by Berger during the NJ Turnpike proposed ROW sampling; this area was beyond the proposed ROW.

Results of Raviv sample BBD18, reportedly collected from a depth of one (1) foot adjacent to the feed end of the furnace, indicate that contamination has occurred in this area. Petroleum hydrocarbons were found at concentrations of 16,300 ppm, and PCBs were found at 320 ppm.

Results from sample BBD17, reportedly collected adjacent to the west underground storage tank at the output end of the furnace also indicates that contamination has occurred in this area. Samples were collected from three intervals; surface, zero to one (0-11) foot and five to seven (5-71) feet. The surface sample was analyzed for PHC'S, PCB's and volatile organics (VOC). Based upon current site conditions, this sample presumably represents ash and solidified organic material in this area. Results indicated PHC's at 16,000 ppm, PCB's at a concentration of 28 ppm and VOC's at 22 ppm. Results of the first one foot sample increment indicates contamination from PHC's (9,210 ppm), base neutral extractables (51 ppm), phenol (20 ppm) and volatile organics (11.5 ppm). This sample was also subject to analysis for dioxin. Results were non-detected at a detection level of 0.32 ppb.

Results from the five to seven (5-7') foot sample increment, assumed to be groundwater elevation, indicate PHC contamination of 20,800 ppm.

Results from sample BBD19, reportedly collected from the alley northeast of the furnace outlet between the closed head reconditioning building and the building north of the furnace (Building No.3), indicate substantially less contamination than that reported for the other samples collected within the furnace area. Samples were collected from three (3) intervals; zero to one (0-1'), one to two (12') feet and two to three (2-3') feet below the surface. Petroleum hydrocarbons and PCB's were detected in the first two sample increments at levels of 4,330 ppm PHC and 37 ppm PCB, and 1,700 ppm PHC and 32 ppm PCB respectively. Results of the sample collected at the third and final increment (23') indicate PHC contamination at a concentration of 130 ppm. No PCB's were detected at this sample increment. The first sample increment (0-1') was also analyzed for volatile organics which was reported to be non-detected.

Results of a surface soil sample (65192) collected by the USEPA during their investigation in February 1984 and analyzed for TCLP metal and pesticides/herbicides, semivolatile and volatile organics, and total priority pollutant metals indicates the presence of total metals and semivolatile organics above NJDEP recommended guidance values. Volatile organics appear to have been non-detected. Additionally, the soil was not found to be leachable for metals based upon results of analysis for TCLP.

5.3 Waste Water Separator Area

5.3.1 Introduction

The water separator area is located east of and adjacent to building No.1, the closed head drum reconditioning building. Waste waters and oil generated during the cleaning and reconditioning of closed head and open head drums were discharged to this area for treatment.

Liquid wastes from the cleaning of closed head drums were directed from Building No.1 to the separator trench. oil and water collected in. the trough and tanks located in the furnace area were also directed to the trench. Primary treatment in this area included the physical separation of organics, water and solids. Waste water was separated initially in the trench and 5,000 gallon underground settling tank. Thereafter the water was pumped to the above ground 60,000 gallon storage tank for final separation. The remaining two storage tanks were never used due to the cessation of operations. Effluent water was discharged to the Passaic Valley Sewer Authority under permit after treatment.

5.3.2 Nature of Contaminants

Past sampling activities in the waste water treatment area have included the collection of samples by the NJDEP (1982), the USEPA (1984), Raviv (1985) and Berger (1985). Samples collected by the NJDEP and USEPA were predominantly representative of waste materials, although some environmental soil samples were analyzed by the NJDEP. Samples collected by Raviv and Berger were predominantly representative of the environment.

Samples were collected from the waste water treatment system by the NJDEP in January and March 1982 while the site was operating. Results from aqueous material in the 5,000 gallon underground tank (sample No. TDO64) indicate that waste waters contained chromium.

Results of sampling by Raviv indicate substantial contamination in the waste water treatment area from the surface elevation to approximately groundwater elevation (5' feet). Surface contaminants identified by Raviv included PHC's in concentrations ranging from 5,920 ppm to 23,700 ppm (BBDS1 & BBDC3) and PCB's at 130 ppm (BBDS1).

Sample BBD16, collected from the 1 to 2 (1-2') interval, was the only discrete sample collected from this interval in the water separator area. This sample indicated elevated levels of PHC's and PCB's (20,800 ppm and 213 ppm respectively). Priority Pollutant Volatile Organics (VOC's) were detected at 1.8 ppm in this sample location as well. A composite sample collected from 5 to 10 (5-10') feet below the surface in this location had dramatically lower levels of these constituents indicating a reduction in the vertical migration of contaminants, presumably from the interception of these materials by groundwater.

Soil samples collected at the 5 to 7 (5-7') foot interval from location BBDC3 (finished as a monitor well) detected elevated levels of PHC's and PCB's (59,000 ppm and 141 ppm, respectively). Total Priority Pollutant's VOC's were also detected at 6.3 ppm. Based upon these results, it appears that petroleum related contamination may have originated from a below ground source or be related to prior land use practices.

Reports for the Berger samples (MI188 and M1189) located within the area were similar in the physical description of general petroleum contamination. However, the Berger samples collected from 0 to 1.5 (0-1.5') feet indicated substantially lower levels of VOC's (0.22 ppm and 0.002 ppm respectively). Likewise, the Berger results from this interval were non-

detected for PCB's with a detection level of 15 ppm. Although these results are from different specific locations, they are relatively close and therefore suggest that contamination is either areally extensive or may be from non-specific contamination in the fill material. Results of Berger sample No. M1198, collected from 0 to 1.5 feet below the surface and topographically downgradient of the separator area, indicate substantially lower levels of contamination than those collected adjacent to the separator.

6.0 REMEDIAL ACTION PLAN

This Remedial Action Workplan has been designed to control, minimize or eliminate the escape of environmental contaminants and hazardous substances identified at the site, which are related to the generation and storage of hazardous wastes from the drum reconditioning operations, and minimize the need for future maintenance. This plan addresses Solid Waste Management Units (SWMU's) used to store RCRA hazardous wastes in excess of 90 days.

Based upon the lack of conclusive documentation concerning the extent of horizontal and vertical contamination, the estimated physical extent of remediation required at this site, and the interfering land use practices employed at this site prior to the complete development of the drum reconditioning facility, this remedial action plan will be conducted in three distinct and separate phases. The plan identifies the steps and provides a description of how each hazardous waste management unit at the facility unit will be closed. SWMUs to be closed include:

A-ld(2) Closure of Tanks - Closure of two (2) settling tanks, associated trench and piping located in the Furnace Area, and closure of one (1) trench, one (1) 5,000 gallon underground settling tank, one (1) 60,000 gallon above ground settling tank and associated piping located in the waste water treatment area;

Additional areas not identified as a solid waste management units, but which are subject to this closure as described in Sections 4 & 5 of this plan, include the excavation of soils.

Phase 2 of this plan will call for the implementation of a site sampling plan to address the horizontal extent of contamination above the groundwater elevation in the following areas:

1. Furnace Area;
2. Waste Water Separator Area.

Prior to the initiation of on-site soil sampling conducted during this phase, a landfill disruption permit will be obtained from the NJDEP, Division of Solid Waste Management. Sampling will be conducted at the locations described in Section 6.2 of this plan.

Upon receipt of the analytical results of Phase 2 sampling, area specific plan and profile drawings will be prepared to graphically indicate the extent of contamination, as defined in Section 6.0.1 of this plan, if applicable. Reporting will include a written interpretation of the data and summary conclusions with interpretation of potentially interfering factors.

Phase 3 of this plan will include the remediation of contaminated soils above the water table as defined in Section 6.0.1 of this plan. Soils will be excavated, staged and disposed as described in Section 6.3 of this plan. The extent of soil remediation will be determined by the extent of contamination found to exist above the cleanup standard within on-site soil in the areas of SWMU'S.

6.0.1 Remedial Action Cleanup Standard

6.1.3 Furnace Area

Ash material currently on the ground, in the underground collection tanks and within the trough in the furnace area will be prepared for disposal as described herein. Ash on the surface of the ground is estimated to be less than 400 cy in total volume; however it is difficult to discern the demarcation between the ash and contaminated soil. Therefore, one (1) composite sample will be collected from material suspected to be ash for analysis. In addition, a composite sample will be collected from each of the two underground open collection tanks and the trough which extends parallel to the furnace and is presumed to contain ash. Samples will be analyzed for the eight (8) TCLP metals, TCLP herbicides and pesticides, PHC'S, PCB'S, Ignitability, Corrosivity, Reactivity. other parameters may be required based upon specifications of the chosen disposal facility(s).

Based upon the analytical results of samples collected during this phase, these materials will be excavated and disposed of before Phase 2 soil sampling, if they are found to be characteristically RCRA hazardous, or during the Phase 3 soil removal if they are not found to be hazardous.

6.1.3.1 Furnace

Although specific information concerning the residual materials contained in the RCRA empty drums cleaned in this furnace is unavailable, these materials were reported to be from paints, vegetable and petroleum oils and other characteristically non-hazardous and hazardous wastes. Based upon the nature of these materials and that of the drums themselves, metals may be present on the interior and exterior walls of the furnace and associated stack. Therefore, the entire furnace will be decontaminated as described below. Thereafter, the furnace will be demolished and disposed of off-site. Deviations from this plan may be required based upon conditions encountered in the field.

1. openings to the existing underground storage tanks utilized to collect wash waters at the output end of the furnace will be covered with 1/2 inch thick plywood sheets to eliminate the potential for injury to personnel. Plywood will be marked appropriately with orange paint or a similar bold marking to warn personnel of the underlying structure.

2. The ground surface within twenty (20) feet of the furnace will be completely covered with six (6) mil polyethylene plastic (poly) to minimize additional impacts to the soil and groundwater. Continuous rolls will be used where possible. Seams where sheets of poly meet will be overlapped a minimum of one (1) foot and joined with an appropriate tape. Seams are to be continuously sealed with no apparent gaps.

3. Artificial berms, constructed of 4' by 4" wooden beams or similar, will be placed under the perimeter of the poly to divert water spray toward any natural low points where decontamination waters can be recovered for disposal. Under no circumstances will disturbances of the existing soil be made to create berms or other water collection structures due to the presence of contamination known to exist therein.

4. The interior and exterior of the furnace will be decontaminated using a low volume high pressure water spray. Wash waters will be prepared with a mild soap solution.

5. Any significant areas of buildup of residual material will be removed using wire brushes and scrapers where possible.

6. Water and solids generated during the washing procedure will be directed to any evident low points in the artificial containment area and collected via a vacuum or pump and placed in appropriate DOT shipping containers. Solids generated will be collected and placed in containers as well. Samples will be collected of rinse waters for disposal purposes and disposed of in accordance with state and federal regulations or discharged to the sanitary sewer under permit.

7. Upon completion of the decontamination process, used polyethylene sheeting will be placed in containers for disposal.

Upon completion of the decontamination procedures, samples will be collected from the interior and exterior of the structure. A total of six (6) chip tests or similar will collected and analyzed for TCLP metals (8) and PCB's.

6.1.3.2 Furnace Demolition

Upon receipt of analytical results from chip tests referenced in section 6.1.3.1 and approval of the structural material(s) into an appropriate land disposal/recycling facility, the furnace will be demolished and loaded into trucks for off-site disposal. Scrap metal and/or other reclaimable debris will be recycled where possible. All materials removed for recycling and not manifested as a regulated material will be accompanied with a Straight-Bill-Of-Lading for tracking purposes.

6.1.7 Water Treatment Area

Based upon information from BB&D, the water separator trench and tanks were used to separate primarily solids from the liquid waste wash water generated during the closed head drum cleaning operation and the cooling of drums exiting the furnace. Although oils and organics were reported to occur within the liquid in small amounts, the separated materials primarily consisted of solids.

Residual materials within the separator were cleaned out subsequent to the consent agreement by BB&D and stored in drums for later disposal. These drums were currently stored in Building No.2 in the furnace area.

Sediments are currently present within the trench and underground 5,000 gallon settling tank. Although this material may be residue from site operations, it is believed to probably reflect wind blown materials that have collected since cessation of site operations in 1983.

6.1.7.1 Treatment Tank Sampling

Settling tanks and trenches will be visually inspected to determine the physical amounts of sediment and water within these structures. Samples will be collected of sediment and water from each of the three (3) water treatment units in this area, if applicable. These structures include the separator trench, the 5,000 gallon underground settling tank and the 60,000 gallon above ground settling tank. Sediment samples will be analyzed for TCLP metals (8), PHC'S, PCB'S, Reactivity and Corrosivity.

Aqueous samples will be collected from any aqueous phases noted during the inspection of the three (3) structures referenced above. Based upon current site conditions, the separator trench and 5,000 gallon settling tank are filled with water, presumably from surface run-off and precipitation. Samples will be analyzed for total RCRA metals, PCB'S, Corrosivity and Ignitability (if phases are observed).

6.1.7.2 Treatment Cleaning

Based upon the analytical results of samples collected from the sediment and water within these structures, water will be removed from the separator trench, 5,000 gallon separator tank and 60,000 gallon above ground tank (if applicable) and disposed of in accordance with current regulations or discharged to a sanitary sewer under permit. Thereafter, the trench and tanks will be cleaned of all sediment for subsequent disposal.

If visible petroleum stains are present on these structures after removal of all sediments, the trench and separator tanks will be decontaminated using low volume, high pressure water as described in Section 6.1.4.3.

Wash waters generated during the decontamination of the above referenced structures will be containerized and disposed of in accordance with current regulations or discharged to the sanitary sewer under permit.

6.3 Phase 3 - Soil Remediation

Phase 3 of this Remedial Action Workplan will include the excavation and removal of contaminated soil, the removal of the underground collection tanks located at the output end of the furnace and the excavation of underground piping from the collection tanks to the water

separator. Excavations will be undertaken in accordance with the procedures set forth below. The horizontal limits of excavation for this area will be determined to the extent possible through sampling described in Phase 2. The vertical extent of excavation will be determined to the extent possible through sampling, as described in Phase 2, and by groundwater elevation since excavation below the groundwater table is not proposed.

Remediation of soil contamination identified during the sampling set forth in Phase 2 of this RAW (Section 6.0) will be performed by removing all contaminated soil within the following parameters:

- Areal Extent - All soil identified as being contaminated above cleanup criteria (other than those soils underlying existing structures which are consistent in comparison with the background soil conditions) shall be excavated.

- Vertical Extent - Excavation of contaminated soil shall be performed to the top of the groundwater table.

Remediation shall be performed in separate and distinct phases based upon the areas of concern. The cleanup criteria, ie. Performance Standard, is described in Section 6.0.1.2. Background and basis is provided in Section's 3.0 and 4.0.

6.3.1 Site Preparation

Prior to the commencement of any excavation activities within the areas of contaminated soil, the following support facilities will be constructed and operational. These facilities have been developed and located in such a manner as to permit rapid removal of contaminated material with full regard to proper environmental management.

6.3.1.1 Remediation of Soil Contamination

The intent of this remediation plan is to delineate and remove from the site, to the extent practicable, source contaminated soils to ground water elevation or the extent of vertical soil contamination in the SWMU's, with the approval and concurrence of the NJDEP. For the purposes of this remediation effort, the furnace area and water treatment area, defined as a contaminated SWMU, as described in Sections 4.0 and 5.0 of this Workplan, will be excavated, stockpiled and sampled for disposal characteristics.

6.3.1.2 Decontamination Pad Construction

The decontamination pad will consist of a 3" high bermed concrete monolith underlain by crushed stone and a 20 mil or similar polyethylene liner. An area approximately 20' x 15'x 2' deep will be excavated in the Contamination Reduction Zone (CRZ) and the

polyethylene liner will be laid down as a secondary containment measure. Approximately 12 cubic yards of crushed stone will be backfilled on top of the polyethylene liner to a depth of 1'. The concrete pad will consist of 6" of poured concrete sloped to a concrete sump pit (2' x 2' x 1') in the corner of the decontamination pad (figure 6-1). Prior to leaving the site, each vehicle will stop on the pad for a high pressure wash. The rinse waters generated during this procedure will be pumped from the sump pit into 55 gallon 17-H DOT approved drums for disposal at a licensed disposal facility or discharged to the local POTW, if approved by the municipal authority pursuant to N.J.A.C. 7:14A-1 et seq.

6.3.2 Contaminated Soil Removal

Each area of contaminated soil removal shall be operated as a separate phase of the remedial action. Prior to commencing excavation in a new area, that area will be delineated as a Contaminated Zone.

The approximate limits of each soil removal area are based on the following criteria:

1. The areal extent of the excavation shall include all soil described in section 6.1.

2. The depth of each excavation shall be to the top of the groundwater table or the extent of vertical contamination above the groundwater table.

3. Excavation of contaminated soil shall not occur at a depth greater than the footing depth of a building or structure without the approval of the project engineer, except when the slope of the excavation exceeds 1' V : 1' H away from the footing, in order to protect the structural integrity of that unit.

Excavation shall commence in accordance with the above criteria until all soil subject to the cleanup criteria has been removed from the area and stockpiled in the soil containment area for subsequent transportation offsite.

6.3.3 Post Excavation Sampling

Post Excavation Sampling of the perimeter sidewalls will be conducted to determine if sufficient soils have been removed from the horizontal axis of the excavation to meet the cleanup criteria. Perimeter sample locations and frequencies will be based upon the distance to locations previously determined to be clean and perimeter length and shape. In general, locations will be spaced a minimum of 30 linear feet apart.

Samples will be collected on a positive bias basis at the level where contamination has been previously identified in the adjacent vertical strata. Sampling methods, equipment, and Quality Assurance and Quality Control measures will be provided.

Analytical parameters will be subject to determination upon receipt of results from delineation sampling performed in accordance with Section 6.2 of this Workplan.